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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of: Khosro Shamsaifar
Serial No.: 10/748,709
Group Art Unit: 2682
Filed: 12/30/2003
Examiner: PAN, YUWEN
FOR: ELECTRONICALLY TUNABLE RF FRONT END MODULE

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APPEAL BRIEF

Sir:

The present amended brief replaces the appeal brief filed September 14, 2006, further to the notification of non-compliant appeal brief mailed 01-24-2007. The index of claims now is mapped to identify independent claims 1, 15 and 31, which refers to the specification by page and line number. The office is authorized to charge deposit any fees (small entity) associated with the consideration of this appeal brief to deposit account 502-697.

The required headings and subject matter follow.

(i) *Real party in interest.*

This case is assigned of record to Paratek Microwave Corporation, who is the real party in interest.

(ii) *Related appeals and interferences.*

There are no known related appeals and / or interferences.

(iii) *Status of claims.*

The status of the claims are: claim(s) 1 - 5, 11, 14 - 19, 25, 28 - 35, 44 and 45 were rejected. Claims 6 – 10, 12 – 13, 20 – 24, 26, 27, 36 - 43 have been cancelled. The rejection of claims 1 - 5, 11, 14 - 19, 25, 28 - 35, 44 and 45 is being appealed.

(iv) *Status of amendments.*

The claims have not been amended subsequent to the response filed 3-31-06.

The attached Claims appendix reflects the current status of amendments.

(v) *Summary of claimed subject matter.*

An electronically tunable RF Front End Module (e.g. 100 of FIG. 1, page 12, line 9), comprising an antenna (e.g. 102 of FIG. 1) for transmitting and receiving a plurality of RF (e.g. PCS, DCS and PCS/DCS as shown in FIG. 1); a first RF switch (e.g. 145 of FIG. 1, page 12, line 13) in communication with said antenna (e.g. 102 of FIG. 1) for switching a plurality of groups of RF signals (e.g. PCS, DCS and PCS/DCS as shown in FIG. 1); a second RF switch (e.g. 130 of FIG. 1) in communication with said first RF switch (e.g. 145 of FIG. 1) for switching between transmit and receive signals (e.g. 115, 125, 140 of FIG. 1); a tunable band pass filter (e.g. 110, 120 of FIG. 1, page 12, line 10) associated with said second RF switch (page 12, line 13) for distinguishing received selected RF signals from said plurality of received RF signals (e.g. PCS, DCS and PCS/DCS as shown in FIG. 1), wherein said tunable band pass filter (e.g. 110 and 120 of FIG. 1, page 12, line 10) associated with said second RF switch (e.g. 130 of FIG. 1, page 12, line 13) utilizes voltage tunable dielectric capacitors to enable tuning; a low pass filter (e.g. 135 of FIG. 1, page 12, line 11) associated with said second RF switch (e.g. 130 of FIG. 1, page 12, line 13) for transmitting selected RF signals from said plurality of RF signals; a third RF switch

(e.g. 150 of FIG. 1, page 12, line 13) in communication with said first RF switch (e.g. 130 of FIG. 1, page 12, line 13) for switching between transmit and receive signals (e.g. 160, 170 and 175 of FIG. 1); a tunable band pass filter (e.g. 155 and 165 of FIG. 1, page 12, line 10) associated with said third RF switch (e.g. 150 of FIG. 1, page 12, line 13) for distinguishing received selected RF signals from said plurality of received RF signals; and a low pass filter (e.g. 180 of FIG. 1, page 12, line 11) associated with said third RF switch (e.g. 150 of FIG. 1, page 12, line 13) for transmitting selected RF signals from said plurality of RF signals.

(vi) *Grounds of rejection to be reviewed on appeal.*

I. Claims 1-5, 11, 15-19, 25, 31-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagn (US 20020090974A1) in view of Partridge et al (US006535076B2).

(vii) *Argument.*

I. The rejection of claims 1 - 5, 11, 15 - 19, 25, 31 - 35 stand rejected under 35 U.S.C. § 103 (a) as being unpatentable over Hagn's admitted prior art (US 20020090974A1) in view of Hagn (US 20020090974A1) and further in view of Partridge et al. (US006535076B2), is in error and should be reversed.

Applicant respectfully submits that the §103 rejection of claims 1 - 5, 11, 15 - 19, 25, 31 - 35 based on Hagn in view of Hagn's admitted prior art in combination with Partridge et al. is in error. As an initial matter, the Office action fails to identify a legally cognizable suggestion for combining Hagn, Hagn's admitted prior art and Partridge et al. In this regard, the Office action states: for Hagn and Hagn's prior art that "It would have been obvious to one ordinary skill in the art at the time the invention was made to combine teaching of Hagn and Hagn's admitted prior art such that highly integrated filters and switch would be able to reduce the size of a 3G phone"; and for Hagn's Prior art, Hagn and Partridge et al that "It would have been obvious to one

ordinary skill in the art at the time the invention was made to combine the teaching of Partridge with Hagn such that the voltage tunable dielectric materials have several inherent advantages including sub-nanosecond response times and very low current under switching conditions”. However, as a matter of law and fact, this is not a proper suggestion for combining Hagn’s Prior art, Hagn and Partridge et al.

Turning first to the legal error, Applicants wishes to remind the Office of the bedrock legal principles for rejecting a claim under 35 U.S.C. § 103. Specifically, in In re Rouffet, 47 U.S.P.Q.2d 1453 (Fed. Cir. 1998) the Federal Circuit explained:

To reject claims in an application under section 103, an examiner must show an unrebutted prima facie case of obviousness. In the absence of a proper prima facie case of obviousness, an applicant who complies with the other statutory requirements is entitled to a patent.

Id. at 1455 (citations omitted and emphasis added).

In the Rouffet case, the Examiner had rejected the pending claims on a combination of references. The Board sustained the Examiner. However, the Federal Circuit reversed the Board’s decision and ruled that the Examiner’s rejections were legally impermissible because they failed to demonstrate a suggestion for combining the references in the manner proposed by the Examiner. As explained by the Federal Circuit:

As this court has stated, “virtually all [inventions] are combinations of old elements.” Therefore, an examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be “an illogical and inappropriate process by which to determine patentability.” To

prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show a motivation to combine the references that create the case of obviousness.

Id. at 1457-58 (citations omitted and emphasis added).

These principles have not been followed in rejecting claims 1 - 5, 11, 14 - 19, 25, 28 - 35, 44 and 45. Merely stating an advantage or possible advantage of combining references or merely that one reference has certain advantageous properties, as was done to reject claims 1 - 5, 11, 14 - 19, 25, 28 - 35, 44 and 45 is not the same as “show[ing] a motivation to combine the references.”

On the contrary, in order to establish a *prima facie* case of obviousness, there must be actual evidence of a suggestion to modify a prior art reference or to combine two prior art references, and the suggestion to combine or modify the prior art must be clear and particular. In re Dembiczak, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). In order to establish a *prima facie* case of unpatentability, particular factual findings demonstrating the suggestion to combine must be made. See, for example, Ecolochem Inc. v. Southern California Edison, 56 U.S.P.Q.2d 1065, 1072-73 (Fed. Cir. 2000) and In re Dembiczak, 50 U.S.P.Q.2d 1614, 1617-1618 (Fed. Cir. 1999). Indeed, the law is quite clear that an obviousness rejection must be based on facts, not conjecture.

The Supreme Court... foreclosed the use of substitutes for facts in determining obviousness under section 103. The legal conclusion of obviousness *must be supported by facts*. Where the legal conclusion is not supported by facts it cannot stand.

In re Warner, 379 F.2d 1011, 1017 (C.C.P.A. 1967). This longstanding principle has been followed to date. For example, in the unpublished Board decision, Ex parte Megens, App. No. 1999-0277 (B.P.A.I. Oct. 29, 1999), the Board stated:

Rejections based on 35 U.S.C. § 103 must rest on a factual basis. In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 177-78 (CCPA 1967). In making such a rejection, an examiner has the initial duty of supplying the requisite factual basis and may not, because of doubts that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in the factual basis. Id.

The examiner's conclusion that it would have been obvious to incline Phillips' loading dock floor 65 rests on the completely unfounded assumption that it would be desirable to drain liquid from the floor. The Phillips reference, however, is devoid of any indication that liquid might accumulate on the floor or that such accumulation would pose a problem even if it did occur. It is therefore apparent that the examiner has resorted to improper speculation and hindsight reconstruction to overcome the admitted deficiency of Phillips vis-à-vis the subject matter recited in claim 1.

(Megens at Pages 4-5)(emphasis added).

This is precisely the situation presented here. The "suggestion" in support of the rejection of claims 1 - 5, 11, 14 - 19, 25, 28 - 35, 44 and 45 amounts to nothing more than a speculative statement that, given the alleged presence of the claim elements in the prior art and an advantage that combining these elements would allegedly achieve, a person skilled in the art would have found it obvious to combine the references to create the claimed invention. The problem with this approach is that it effectively eliminates the requirement of identifying a suggestion for combining references from the obviousness analysis. More specifically, the analysis present in the Office action proceeds in the following manner:

- a) What elements are present in the pending claims?
- b) Can these elements be found in prior art references?
- c) If they can be found, and the references themselves provide no suggestion for combining these elements, can some end or advantage be identified to combine the elements in the manner proposed in the Applicants' claims?

d) If so, combine the elements in the manner proposed by the Applicants and reject the pending claims.

This mode of analysis is, of course, deeply flawed. Specifically, as noted by the Federal Circuit in the Rouffet quote identified above, all of the elements of most claimed inventions can almost always be found in the prior art. Therefore, the answer to step “b” above will almost always be “yes”. Since it is a statutory requirement that all inventions have utility, there will also always be an identifiable end or advantage in combining the elements in the prior art in the manner proposed by any claim (e.g., if there was no purpose to an element in a claim it would not be included in the claimed apparatus, after all, who would pursue a claim with superfluous elements or a claim with no utility?). Therefore, if the “suggestion” requirement of 35 U.S.C. § 103 can be met by merely identifying any end or advantage which will be achieved by combining the elements of the prior art references, the suggestion requirement can always be met and is utterly meaningless.

This inherent flaw in the analysis employed in rejecting claims 1 - 5, 11, 14 - 19, 25, 28 - 35, 44 and 45 is elucidated by viewing the alleged “suggestion” the Office action identifies in support of the rejection. As noted above, in rejecting claims 1 - 5, 11, 14 - 19, 25, 28 - 35, 44 and 45, the Office action states: “It would have been obvious to one ordinary skill in the art at the time the invention was made to combine the teaching of Partridge with Hagn such that the voltage tunable dielectric materials have several inherent advantages including sub-nanosecond response times and very low current under switching conditions”; and “It would have been obvious to one ordinary skill in the art at the time the invention was made to combine teaching of Hagn and Hagn's admitted prior art such that highly integrated filters and switch would be able to reduce the size of a 3G phone”. The first part of the statement, namely, “It would have been

obvious ...” is merely boilerplate language that does not address the suggestion requirement. The second part of the statement, namely, “to combine teaching of Hagn and Hagn's admitted prior art”; and “to combine the teaching of Partridge with Hagn” does not even state what a proposed modification of the primary reference is to be. The final part of the statement, namely, “such that the voltage tunable dielectric materials have several inherent advantages including sub-nanosecond response times and very low current under switching conditions” and “such that highly integrated filters and switch would be able to reduce the size of a 3G phone” must then be the “motivations” for modifying Hagn in view of Hagn’s admitted prior art in combination with Partridge et al..

However, while it may be true that possible advantages may include “sub-nanosecond response times and very low current under switching conditions” and “such that highly integrated filters and switch would be able to reduce the size of a 3G phone”, that is not a suggestion in and of itself for combining the references. “The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification.” In re Fritch, 23 U.S.P.Q.2d 1780, 1783-84 (Fed. Cir. 1992)(emphasis added). Here, the Office action does not identify any evidence in the prior art indicating or in any way suggesting the desirability of the proposed modification. It only identifies an old element that has an inherent property. Indeed, the Office action’s naked, conclusory statement amounts to nothing more than stating: A person of ordinary skill in the art would be motivated to modify Hagn, Hagn’s prior art and Partridge et al. to enable sub-nanosecond response times and very low current under switching conditions and highly integrated filters and switches that would be able to reduce the size of a 3G phone, because they would want to gain a benefit from the enabling of sub-nanosecond response times

and very low current under switching conditions and highly integrated filters and switches would be able to reduce the size of a 3G phone. In other words, the Examiner is effectively saying that the motivation of adding X is to have the inherent benefit of adding X. Of course, such circular reasoning (i.e., add “X” to have “X”) cannot be a legally proper tool for identifying a suggestion for combining references. If it were, no combination of old elements would ever be patentable since one can always nakedly state, a person would be motivated to add old element X from one reference to another reference because adding element X offers an advantage (again, if adding “X” had no advantage, who would ever claim it?). Simply put, there is *always* an advantage to combining old elements that can be identified through hindsight *once that combination is known*. It should be quite clear from the above that merely identifying an advantage for adding an old element to a combination of elements is not a proper suggestion for making that combination. The MPEP further proves this point. In particular, MPEP § 2144 states that “the strongest rationale for combining references is a recognition... in the prior art or... based on established scientific principles or legal precedent, that some advantage would have been produced by their combination.” The MPEP cites In re Sernaker, 702 F.2d 989, 994-95 (Fed. Cir. 1983) to support this proposition.

Looking at the Sernaker case, we see that the Federal Circuit states: “The lesson of this case appears to be that prior art references in combination do not make an invention obvious unless something in the prior art references would suggest the advantage to be derived from combining their teachings.” Sernaker, 702 F.2d at 995-96 (emphasis added). Notice that this statement does not state that it is obvious to combine references simply because there is an advantage to doing so. On the contrary, it carefully states that there can be no obviousness ruling unless something in the art suggests an advantage to combining the references. The advantage

itself is not the suggestion, but rather the Court makes it clear that something else suggests the advantage.

The MPEP quote noted above is similar. It states that the “strongest rationale for combining references is a recognition... in the prior art or... based on established scientific principles or legal precedent that some advantage or expected beneficial result would have been produced by their combination.” (MPEP, Page 2100-127) (emphasis added). This, of course, does not state that the strongest rationale for combining references is the mere presence of an advantage to doing so. Instead, as in Sernaker, the strongest rationale is a recognition (i.e., a suggestion) in the art that an advantage will result.

Turning back to the rejections at issue, rather than identifying something in the art that suggests an advantage to making the combination, the Office action just looks for the advantage itself and mislabels that advantage as “suggestion.” As explained above, this is a literal elimination¹ of the suggestion requirement. Since there is always an advantage to a claimed element (or why would you claim it?), the Office action’s misplaced view of an advantage as the suggestion inherently renders all combinations of old elements unpatentable precisely because it eliminates the suggestion requirement from the analysis. Clearly, neither the MPEP section noted above nor the Sernaker case upon which that MPEP section rests for authority stands for the proposition that an advantage of an element is a suggestion in and of itself for including that element in a combination.

In view of the foregoing, applicants respectfully submit that the §103 rejection of claims 1 - 5, 11, 14 - 19, 25, 28 - 35, 44 and 45 must be reversed because it fails to identify a legally proper suggestion for combining the prior art references in the manner proposed by the Office

¹ It literally removes the “recognition” portion of the MPEP quote above and the “something in the art” portion of the Sernaker quote.

action. In other words, the Office has failed to establish a *prima facie* case of obviousness under 35 U.S.C. § 103. On this basis alone, the rejections of claims 1 - 5, 11, 14 - 19, 25, 28 - 35, 44 and 45 must be reversed.

II. The rejection of claims 14, 28 - 30, 44 and 45 were rejected under 35 U.S.C. 103(a) as being unpatentable over Hagn (US 20020090974A1) in view of Yamakawa et al (US 20030068998A1).

For at least the reasoning set forth above concerning claims 1 - 5, 11, 15 - 19, 25, 31 - 35, Appellant submits that the rejection of claims 14, 28 - 30, 44 and 45 under 35 U.S.C. 103(a) as being unpatentable over Hagn (US 20020090974A1) in view of Yamakawa et al (US 20030068998A1) is in error and should be reversed.

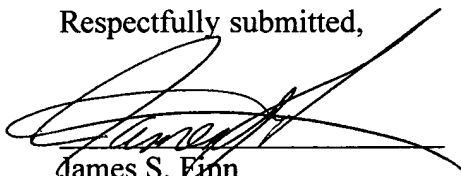
CONCLUSION

In view of the foregoing, favorable reconsideration and reversal of the rejections is respectfully requested. Early notification of the same is earnestly solicited. If there are any questions regarding the present application, the Examiner and / or the Board is invited to contact the undersigned attorney at the telephone number listed below.

February 21, 2007

Date

Respectfully submitted,

A handwritten signature in black ink, appearing to read "James S. Finn", is written over a horizontal line.

James S. Finn

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(viii) *Claims appendix.*

1. An electronically tunable RF Front End Module (page 12, line 11, element 100), comprising:

an antenna (page 12, line 17, element 105) for transmitting and receiving a plurality of RF signals;

a first RF switch (page 13, line 6, element 145) in communication with said antenna (page 12, line 17, element 105) for switching a plurality of groups of RF signals;

a second RF switch (page 13, line 4, element 225) in communication with said first RF switch (page 13, line 6, element 145) for switching between transmit and receive signals;

a tunable band pass filter (page 12, line 20, element 205) associated with said second RF switch (page 13, line 4, element 225) for distinguishing received selected RF signals from said plurality of received RF signals, wherein said tunable band pass filter (page 12, line 20, element 205) associated with said second RF switch (page 13, line 4, element 225) utilizes voltage tunable dielectric capacitors (page 11, line 17) to enable tuning;

a low pass filter (page 13, line 14, element 325) associated with said second RF switch (page 13, line 4, element 225) for transmitting selected RF signals from said plurality of RF signals;

a third RF switch (page 13, line 16, element 360) in communication with said first RF switch (page 13, line 6, element 145) for switching between transmit and receive signals;

a tunable band pass filter associated with said third RF switch (page 13, line 16, element 360) for distinguishing received selected RF signals from said plurality of received RF signals; and

a low pass filter (page 14, line 14, element 375) associated with said third RF switch (page 13, line 16, element 360) for transmitting selected RF signals from said plurality of RF signals.

2. The electronically tunable RF Front End Module of claim 1, wherein said tunable band pass filter associated with said second RF switch for distinguishing received selected RF signals from said plurality of received RF signals, distinguishes between frequencies in the DCS and PCS bands.

3. The electronically tunable RF Front End Module of claim 1, wherein said low pass filter associated with said second RF switch for transmitting selected RF signals from said plurality of RF signals, selectively transmits signals in the DCS and PCS frequency bands.
4. The electronically tunable RF Front End Module of claim 1, wherein said tunable band pass filter associated with said third RF switch for distinguishing received selected RF signals from said plurality of received RF signals distinguishes between frequencies in the GSM 800 and GSM 900 bands.
5. The electronically tunable RF Front End Module of claim 1, wherein said low pass filter associated with said third RF switch for transmitting selected RF signals from said plurality of RF signals, selectively transmits signals in the GSM 800 and GSM 900 frequency bands.
6. Cancel Claim 6.
7. Cancel Claim 7.
8. Cancel Claim 8.
9. Cancel Claim 9.
10. Cancel Claim 10.
11. The electronically tunable RF Front End Module of claim 1, wherein said tunable band pass filter associated with said third RF switch utilizes voltage tunable varactors to enable tuning.
12. Cancel claim 12.
13. Cancel claim 13.

14. The electronically tunable RF Front End Module of claim 1, further comprising:
a duplexer associated with said second RF switch, said duplexer outputting an RF signal to a bandpass filter for transmitting a selected RF signal and receiving a selected RF signal from said bandpass filter.
15. A method of electronically tuning an RF front end using an RF Front End Module (page 12, line 11, element 100), comprising:
transmitting and receiving a plurality of RF signals via an antenna (page 12, line 17, element 105);
switching a plurality of RF signals by frequency bands with a first RF switch (page 13, line 6, element 145) in communication with said antenna (page 12, line 17, element 105);
switching between transmit and receive signals with a second RF switch (page 13, line 4, element 225) in communication with said first RF switch (page 13, line 6, element 145);
distinguishing received selected RF signals from said plurality of received RF signals with a tunable band pass filter (page 12, line 20, element 205) associated with said second RF switch (page 13, line 4, element 225), wherein said tunable band pass filter (page 12, line 20, element 205) associated with said second RF switch (page 13, line 4, element 225) utilizes voltage tunable dielectric capacitors (page 11, line 17) to enable tuning;
transmitting selected RF signals from said plurality of RF signals with a low pass filter (page 13, line 14, element 325) associated with said second RF switch (page 13, line 4, element 225);
switching between transmit and receive signals by a third RF switch (page 13, line 16, element 360) in communication with said first RF switch (page 13, line 6, element 145);
distinguishing received selected RF signals from said plurality of received RF signals with a tunable band pass filter (page 12, line 20, element 205) associated with said third RF switch; and
transmitting selected RF signals from said plurality of RF signals with a low pass filter associated with said third RF switch (page 13, line 16, element 360).

16. The method of electronically tuning an RF front end using an RF Front End Module of claim 15, wherein said tunable band pass filter associated with said second RF switch for distinguishing received selected RF signals from said plurality of received RF signals, distinguishes between frequencies in the DCS and PCS bands.

17. The method of electronically tuning an RF front end using an RF Front End Module of claim 15, wherein said low pass filter associated with said second RF switch for transmitting selected RF signals from said plurality of RF signals, selectively transmits signals in the DCS and PCS frequency bands.

18. The method of electronically tuning an RF front end using an RF Front End Module of claim 15, wherein said tunable band pass filter associated with said third RF switch for distinguishing received selected RF signals from said plurality of received RF signals distinguishes between frequencies in the GSM 800 and GSM 900 bands.

19. The method of electronically tuning an RF front end using an RF Front End Module of claim 15, wherein said low pass filter associated with said third RF switch for transmitting selected RF signals from said plurality of RF signals, selectively transmits signals in the GSM 800 and GSM 900 frequency bands.

20. Cancel Claim 20.

21. Cancel Claim 21.

22. Cancel Claim 22.

23. Cancel Claim 23.

24. Cancel Claim 24.

25. (Original) The method of electronically tuning an RF front end using an RF Front End Module of claim 15, wherein said tunable band pass filter associated with said third RF switch utilizes voltage tunable varactors to enable tuning.
26. Cancel claim 26.
27. Cancel claim 27.
28. The method of electronically tuning an RF front end using an RF Front End Module of claim 15, further comprising:
outputting a duplexed RF signal, duplexed via a duplexer associated with said second RF switch, to a bandpass filter for transmitting a selected RF signal and receiving a selected RF signal from said bandpass filter.
29. The method of electronically tuning an RF front end using an RF Front End Module of claim 15, wherein said selected transmitted RF signal and selected received RF signal is a signal in the UMTS frequency band.
30. The electronically tunable RF Front End Module of claim 14, wherein said selected transmitted RF signal and selected received RF signal is a signal in the UMTS frequency band.
31. An electronically tunable RF Front End Module (page 12, line 11, element 100), comprising:
a first tunable bandpass filter (page 12, line 20, element 205), said first tunable bandpass filter (page 12, line 20, element 205) capable of being tuned to receive a plurality of distinct frequency bands, wherein said first tunable band pass filter (page 12, line 20, element 205) utilizes voltage tunable dielectric capacitors (page 11, line 17) to enable tuning;
a first lowpass filter (page 12, line 14, element 135) capable of transmitting predetermined frequency bands;
a first switch (page 13, line 6, element 145) in communication with said first lowpass filter (page 13, line 14, element 325) and said first tunable bandpass filter (page 12, line 20,

element 205) for switching between said first tunable bandpass filter (page 12, line 13, element 110) and said first low pass filter (page 14, line 14, element 375) to enable switching between transmitting and reception of RF signals;

a second tunable bandpass filter (page 12, line 13, element 120) , said second tunable bandpass filter (page 12, line 13, element 120) capable of being tuned to receive a plurality of distinct frequency bands;

a second lowpass filter (page 12, line 14, element 180) capable of transmitting predetermined frequency bands;

a second switch (page 13, line 4, element 225) in communication with said second lowpass filter (page 12, line 14, element 180) and said second tunable bandpass filter (page 12, line 13, element 120) for switching between said second tunable bandpass filter (page 12, line 13, element 120) and said second low pass filter (page 12, line 14, element 180) to enable switching between transmitting and reception of RF signals; and

an antenna (page 12, line 17, element 105) in communication with a third switch, said third switch (page 13, line 4) enabling switching between said first (page 13, line 6, element 145) and said second (page 13, line 4, element 225) switch.

32. The electronically tunable RF Front End Module of claim 31, wherein said first tunable bandpass filter capable of being tuned to receive a plurality of distinct frequency bands tuned to receive frequencies in the DCS and PCS bands.

33. The electronically tunable RF Front End Module of claim 31, wherein said first lowpass filter capable of transmitting predetermined frequency bands, transmits signals in the DCS and PCS frequency bands.

34. The electronically tunable RF Front End Module of claim 31, wherein said second tunable bandpass filter capable of being tuned to receive a plurality of distinct frequency bands receives frequencies in the GSM 800 and GSM 900 bands.

35. The electronically tunable RF Front End Module of claim 31, wherein second lowpass filter capable of transmitting predetermined frequency bands transmits signals in the GSM 800 and GSM 900 frequency bands.

36. Cancel Claim 36.

37. Cancel Claim 37.

38. Cancel Claim 38.

40. Cancel Claim 40.

41. Cancel Claim 41.

42. Cancel Claim 42.

43. Cancel Claim 43.

44. The electronically tunable RF Front End Module of claim 31, further comprising:
a duplexer associated with said first RF switch, said duplexer outputting an RF signal to a bandpass filter for transmitting a selected RF signal and receiving a selected RF signal from said bandpass filter.

45. The electronically tunable RF Front End Module of claim 454, wherein said selected transmitted RF signal and selected received RF signal is a signal in the UMTS frequency band.

(ix) *Evidence appendix.*

None.